

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/723,291  
(Attorney Docket No. GP-303187)

Filed November 26, 2003

James R. Rosseau

Group 3661

METHOD AND SYSTEM FOR DETERMINING  
TIRE PRESSURE IMBALANCES

Examiner Thu V. Nguyen

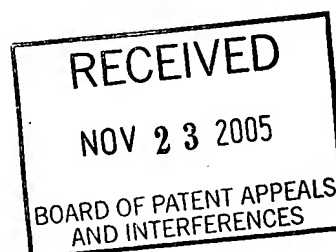
BEFORE THE BOARD OF PATENT APPEALS  
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Sir:

REPLY BRIEF FOR APPELLANT GENERAL MOTORS

This Reply Brief is a response to the Examiner's Answer dated November 1, 2005.



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Serial No. 10/723,291

Page 2

### ARGUMENT

The present invention is a system and method to determine when any of the wheels of a vehicle are in rotational error through an adaptive measurement of the distance that the wheels have traveled without a calculation of speed for the wheels. More precisely, the present invention provides a system to accurately measure tire pressure imbalance through the measurement of distance by way of digital pulse devices. Moreover the present invention does not use the measured time between digital pulses.

On page 5 of the Examiner's Answer, the Examiner stated that a tire having a pressure fault travels smaller distances than a properly inflated tire. Applicants respectfully agree with the Examiner on this point. On pages 6 and 7 of the Examiner's Answer, the Examiner stated that the claims do not disclose how the present application obtains distant data to avoid using a time factor in determining a tire pressure fault. Applicants request that the Examiner clarify as to whether the Examiner is making an enablement rejection or an obviousness rejection. To address an obviousness rejection by the Examiner, Applicants assert that the distances traveled by each tire are stored in memory and may be used at any time to determine a tire pressure fault. Speed is an instantaneous measurement (with reference to time) with both distance and time fundamentally linked to determine a speed value. Furthermore, the claims of the present invention claim the use of only distance to determine a tire pressure fault. The cited prior art discloses only the use of speed. As previously stated distance is not speed and speed is not distance.

To reiterate, Okawa et al., Sharp, and Jackson et al. are all silent with respect to using the distance a tire and/or tires have traveled to determine a tire pressure fault. While it is a principle of physics that speed is a function of distance and time, which are fundamentally linked (and that rolling diameter will effect the speed of a tire), the prior art cited by the Examiner clearly uses only wheel speeds to determine a tire pressure fault. Speed is not distance and distance is not speed. A speed measurement requires the additional instantaneous dimension of time. Okawa et

Serial No. 10/723,291

Page 3

al disclosed in column 4, lines 10-25 that angular velocity is used to determine a tire pressure fault. Sharp in column 6, lines 5-50 uses wheel speed to determine a tire pressure fault. Jackson et al. merely discloses the use of sensors to determine the rolling diameter of a wheel. The fundamental difference between distance and speed is the instantaneous use of time. Speed based tire pressure systems that use wheel pulses are dependent on fast highly accurate processors with high throughput, as they possibly receive thousands of pulses per second and must within a certain time period convert these pulses (using time) to a speed based calculation. Due to the nature of these speed calculations they are prone to noisy data and microprocessor timing limitations. The present invention is based on the distance traveled and is not dependent on time. This is an important and fundamental difference between the present invention and the prior art. Okawa et al., Sharp, and Jackson et al, singly or in combination, do not teach or suggest the present claimed invention.

The Examiner is practicing improper hindsight reconstruction, as there is no teaching or motivation to suggest the claims of the present invention. Applicants object to any notion that the prior art teaches a distance based tire pressure fault and assert that the Examiner's statements are highly speculative and are not supported by prior art, as the cited art is completely silent with to using the distance a wheel has traveled to determine a tire pressure fault. A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of the invention to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of hindsight syndrome wherein that which only the invention taught is used against its teacher." *In Re Kotzab*, 217 F.3d 1365. The Examiner has fallen victim to hindsight reconstruction and has also ignored the elements of the claimed invention and failed to explain how and why the claimed subject matter is rendered unpatentable over the prior art and point out where each of the specific limitations recited in the rejected claims is found in the prior art relied on.

Serial No. 10/723,291

Page 4

Okawa et al. and Sharp clearly teach away from the present invention as they disclose a speed based and not distance based tire pressure fault system. The suggested combination of Okawa et al., Sharp and Jackson et al. by the Examiner is improper, references cannot be combined where the reference teaches away from their combination. See MPEP Section 2145.

Applicants requested in the Amendment of October 13, 2004 that: If the Examiner relies on personal knowledge that the apparatus of the present invention is obvious, Applicants respectfully request support for this assertion in the form of an affidavit that shall be subject to contradiction or explanation by the affidavits of the Applicants and other persons under 37 CFR 1.104(d)(2). The Examiner has not provided an affidavit.

Claim 1, 4, and 6 of the present claimed invention include elements directed to a distance based tire pressure fault. The cited references are silent with respect to a distance based tire pressure fault. Okawa et al., Sharp, and Jackson et al., singly or in combination, do not teach or suggest Claims 1, 4, and 6.

Claims 9 and 10 of the present invention include elements that specifically negate the use of speed and time to determine a tire pressure fault. The cited references clearly require the use of speed and time with reference to a tire pressure fault. Okawa et al., Sharp, and Jackson et al., singly or in combination, do not teach or suggest Claims 9 and 10.

Serial No. 10/723,291

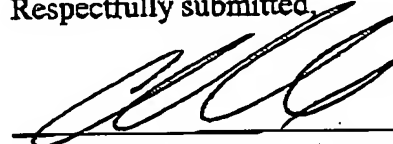
Page 5

SUMMARY

Okawa et al., Sharp, and Jackson et al., singly or in combination, do not teach or suggest the present claimed invention. The Examiner has failed to explain how and why the claimed subject matter is rendered unpatentable over the prior art and point out where each of the specific limitations recited in the rejected claims is found in the prior art relied on. Applicants therefore request allowance of independent Claims 1-10.

If for some reason a fee needs to be paid, please charge Deposit Account No. 07-0960 for the fees, which may be due.

Respectfully submitted,



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